



**Matthew Rodriguez**  
Secretary for  
Environmental Protection



## Department of Toxic Substances Control

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**Edmund G. Brown Jr.**  
Governor

### TITLE 22

#### 45-DAY PUBLIC NOTICE AND COMMENT PERIOD

#### Disposition Options for Universal Waste Cathode Ray Tubes (CRTs) and CRT Glass

**Department Reference Number: R-2011-03**

**Office of Administrative Law Notice File Number: Z-2018-0625-01**

**NOTICE IS HEREBY GIVEN** that the Department of Toxic Substances Control (DTSC) proposes to adopt new or amended California Code of Regulations, Title 22, Division 4.5, Chapters 11 and 23, sections 66261.4, 66273.6, 66273.7, 66273.9, 66273.70, 66273.72, 66273.73, 66273.74, 66273.75, 66273.80, 66273.81, 66273.82, 66273.83, and 66273.84.

#### PUBLIC HEARING

DTSC will hold one public hearing on the proposed regulation at the following time and location:

DATE: August 20, 2018  
TIME: 1 p.m. to 3 p.m. (PDT)  
LOCATION: Sacramento Regional Office  
Boardrooms 1 and 2  
8800 Cal Center Drive  
Sacramento, California 95826

At the time and location listed above, any person(s) may present statements or arguments, orally or in writing, relevant to this proposal described in the Informative Digest. The public hearing will convene at 1:00 p.m. PDT and will remain open until 3:00 p.m. PDT, or until no attendees present testimony, whichever occurs first.

Representatives of DTSC will preside at the hearing. DTSC requests persons who wish to speak to please register before the hearing. Pre-hearing registration will be conducted at the location of the hearing from 12:15 p.m. PDT until the hearing commences. Registered persons will be heard in the order of their registration. Anyone else wishing to speak at the hearing will have an opportunity after all registered persons have been heard.

All visitors are required to sign in prior to attending any meeting at the security desk located just inside the building's public entrance. Please allow adequate time to sign in and receive a visitor badge before the public hearing begins.

## **NOTICE PERTAINING TO ACCESSIBILITY & REASONABLE ACCOMMODATION**

All documents related to this regulation can be made available in alternate format (*i.e.*, Braille, large print, etc.) or in another language, as requested, in accordance with State and Federal law. Further, to ensure the public has equal access to all available services and information, DTSC will provide disability-related reasonable accommodations and/or translator/interpreter needs, upon request. For assistance, please contact **Litiana Patino at (916) 324-3095** or [Litiana.Patino@dtsc.ca.gov](mailto:Litiana.Patino@dtsc.ca.gov) as soon as possible, but no later than 10 business days prior to the scheduled hearing. TTY/TDD/Speech-to-Speech users may dial 7-1-1 for the California Relay Service.

## **WRITTEN COMMENT PERIOD**

Any interested person(s) or their authorized representative(s) may submit written comments relevant to the proposed regulatory action to DTSC in either electronic or hard-copy formats.

Written comments may be submitted electronically through the DTSC regulations email address at [crt\\_regs@dtsc.ca.gov](mailto:crt_regs@dtsc.ca.gov), or please direct hard-copy written comments to:

Ms. Teresa Rizzardo  
Department of Toxic Substances Control  
P.O. Box 806  
Sacramento, CA 95812-0806

The written comment period will close at 11:59 p.m. PDT on August 20, 2018. Only comments received at the DTSC office by that date and time will be considered.

## **AUTHORITY AND REFERENCE**

### **Authority**

These regulations are being proposed under the following authorities:

- Health and Safety Code section 25141.5. This section grants DTSC authority to adopt by regulation, alternative management standards for disposal of a hazardous waste that would be classified as hazardous solely because it exceeds Total Threshold Limit Concentrations.
- Health and Safety Code section 25143.2.5. This section grants DTSC authority to exclude from DTSC's hazardous waste regulations cathode ray tube (CRT) panel glass that is managed in accordance with this section.
- Health and Safety Code section 25150. This section grants DTSC authority to adopt standards and regulations related to the management of hazardous waste.

- Health and Safety Code section 25173. This section grants DTSC the authority to ensure that trade secrets used by a person regarding the methods of hazardous waste handling and disposal are used only in connection with the responsibilities of DTSC pursuant to chapter 6.5 of division 20 of the Health and Safety Code and that such trade secrets are not disseminated without the consent of the person.
- Health and Safety Code section 25214.9. This section grants DTSC authority to adopt regulations allowing DTSC to establish management standards as an alternative to one or more of the standards in chapter 6.5 of division 20 of the Health and Safety Code for any specified activity that involves the management of an electronic waste.
- Health and Safety Code section 58012. This section grants DTSC authority to adopt regulations.

## Reference

These regulations implement, interpret, or make specific the following:

- Health and Safety Code section 25141.5. This section grants DTSC authority to adopt by regulation, alternative management standards for disposal of a hazardous waste that would be classified as hazardous solely because it exceeds Total Threshold Limit Concentrations.
- Health and Safety Code section 25143.2.5. This section grants DTSC authority to exclude from DTSC's hazardous waste regulations CRT panel glass that is managed in accordance with this section.
- Health and Safety Code section 25150. This section grants DTSC authority to adopt standards and regulations related to the management of hazardous waste.
- Health and Safety Code section 25159.5. This section specifies that DTSC shall, insofar as practicable, make the standards and regulations conform to corresponding federal regulations. This section does not prohibit DTSC from adopting standards or regulations that are more stringent than federal regulations.
- Health and Safety Code section 25173. This section grants DTSC the authority to ensure that trade secrets used by a person regarding the methods of hazardous waste handling and disposal are used only in connection with the responsibilities of DTSC pursuant to chapter 6.5 of division 20 of the Health and Safety Code and that such trade secrets are not disseminated without the consent of the person.
- Health and Safety Code section 25201. This section grants DTSC the authority to require hazardous waste facilities that store, treat, transfer, recover resources from, or dispose of hazardous waste, to obtain a hazardous waste facilities permit or other grant of authorization.
- Health and Safety Code section 25205.7. This section grants DTSC the authority to enter into a written agreement with a person who applies for a waste classification determination from DTSC pursuant to which that person shall

reimburse DTSC, pursuant to Article 9.2 (commencing with Section 25206.1), for the costs incurred by DTSC in processing the application.

- Health and Safety Code section 25214.9. This section grants DTSC authority to adopt regulations allowing DTSC to establish management standards as an alternative to one or more of the standards in chapter 6.5 of division 20 of the Health and Safety Code for any specified activity that involves the management of an electronic waste.

## INFORMATIVE DIGEST/POLICY STATEMENT OVERVIEW

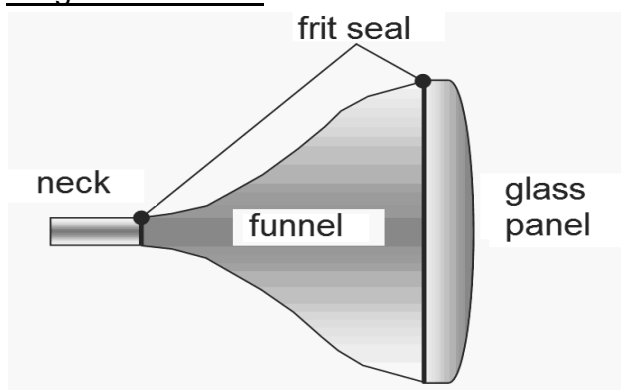
### ***Policy Statement Overview***

This rulemaking is necessary to ensure the safe and effective management of waste CRTs and CRT glass. The Electronic Waste Recycling Act of 2003 (EWRA)<sup>1</sup> was established to eliminate electronic waste stockpiles and legacy devices, including waste CRT devices and CRTs, by providing a comprehensive and innovative system for their reuse, recycling, and proper and legal disposal. Pursuant to the EWRA, DTSC designated CRT devices such as televisions and computer monitors as “covered electronic devices.” The waste CRT devices and CRTs were managed under already established alternative management standards known as universal waste management standards. Changes in the electronics market have substantially reduced the demand for recycled CRT glass. As a result, the alternative management standards no longer achieve the objectives of the EWRA, and the current handling of waste CRTs and CRT glass presents a threat to public health and the environment. DTSC is therefore proposing regulatory changes to ensure safe and effective management of this waste.

### Definitions: CRT Device and CRT

A CRT device means any electronic device that contains one or more CRTs including, but not limited to, computer monitors, televisions, cash registers, and oscilloscopes. A CRT means a vacuum tube or picture tube used to convert an electrical signal into a visual image. A CRT is composed of three types of glass components: CRT panel glass, CRT funnel glass, and the frit glass which binds the panel and funnel glasses together. The neck is an extension of the funnel glass that covers the electron gun which creates the visual image.

### Diagram of a CRT



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<sup>1</sup> Senate Bill 20 (Sher) Statutes of 2003, Chapter 526

## ***Background***

***Legislation:*** Prior to 2003, electronic waste (including CRT devices) was subject to management as hazardous waste based on the levels of constituents such as lead, mercury, and cadmium, among others, present in the waste. At that time, accelerated innovation in the electronics and computer technology sector resulted in rapid obsolescence and turnover of electronic devices. The EWRA was established in 2003 to reduce the hazards posed by growing stockpiles of electronic waste and authorized DTSC to establish alternative management standards for this waste.<sup>2</sup> The EWRA also authorized the California Integrated Waste Management Board (now known as the Department of Resources Recycling and Recovery, or CalRecycle, henceforth referred to as CalRecycle) to establish fees and a cost reimbursement system to incentivize collection and recycling of electronic waste<sup>3</sup>, and limits the CalRecycle payment authority to reimbursement of collectors and recyclers who handle covered electronic wastes in compliance with all applicable laws and regulations.<sup>4</sup>

***Initial Implementation by Regulation:*** In early 2004, CalRecycle and DTSC each adopted emergency regulations pursuant to Public Resources Code section 42475.2 to implement, interpret, and make specific the EWRA. CalRecycle's emergency regulations<sup>5</sup> established a program that provides cost-reimbursement to recyclers of discarded CRT devices and CRTs who render CRTs unusable for their intended purpose by "cancelling" the waste CRT (i.e., releasing the vacuum inside the tube or crushing or shredding the CRT devices or CRTs pursuant to the treatment standards and other management requirements specified by DTSC in its emergency regulations). The cost-reimbursement program provides a financial incentive to appropriately manage and recycle CRT devices by recyclers.

DTSC's emergency regulations<sup>6</sup> identified CRT devices and CRTs as "covered electronic devices" eligible for CalRecycle's cost-reimbursement program. The emergency regulations also listed CRT devices and CRTs as "universal waste" and established alternative management standards for that waste.<sup>7</sup> These alternative management standards may be applied in lieu of management of CRTs and CRT glass as fully regulated hazardous wastes pursuant to chapter 6.5 of division 20 of the Health and Safety Code (commencing with sec. 25100), provided CRT glass generated by the universal waste handler who treats CRT devices or CRTs (i.e., CRT recycler) is ultimately sent for recycling to a CRT glass manufacturer or a primary or secondary lead smelter. The purpose of these alternative management standards is to promote participation by CRT recyclers in CalRecycle's EWRA recycling program while maintaining an appropriate level of oversight of their hazardous waste recycling activities. Maximizing participation in the EWRA reimbursement program is necessary to realize its full potential benefit to human health and the environment. DTSC's

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<sup>2</sup> Health and Safety Code section 25214.9

<sup>3</sup> Public Resources Code section 42476

<sup>4</sup> Public Resources Code section 42476, subdivision (f)(2)

<sup>5</sup> filed May 10, 2004, Register 2004, Number: 20

<sup>6</sup> OAL Reference Number: 04-0526-01E

<sup>7</sup> Consolidated Universal Waste Regulations and Authorized Treatment of Electronic Hazardous Wastes to OAL (OAL Reference Number: Z-2008-0616-03). This rulemaking, which was approved and became effective on February 4, 2009, finalized the emergency regulations adopted in 2004 that authorized alternative management standards for universal wastes, including CRT devices, CRTs, and CRT glass

alternative management standards for covered electronic waste achieved this goal for several years, based on payment claims submitted to CalRecycle and inspections of universal waste handlers conducted by DTSC.

*Technology and Market Changes:* The advancement of new types of video display technologies (e.g., flat screen televisions and computer monitors) began to displace CRTs in 2006. Demand for the manufacturing of new CRTs decreased, which reduced recycling opportunities for waste CRTs as this was the primary way in which waste CRTs were recycled. Lead smelters continued to accept some CRT glass, but still did not show signs of having the capacity to significantly promote the recycling of all the remaining CRT glass. Additionally, due to the decreasing CRT manufacturing market, DTSC was concerned that much of the CRT glass that was exported was not recycled as prescribed by DTSC's universal waste regulations because only one CRT manufacturer, located in India, was operating.<sup>8</sup>

By 2011, DTSC observed trends during inspections of CRT recyclers which were reflected in data from annual reports provided to DTSC by CRT recyclers regarding types and quantities of universal waste collected, treated, and shipped to destinations. These trends included: (1) the inability of CRT recyclers to provide documentation that their CRT glass was actually being sent to a CRT glass manufacturer to be recycled; (2) CRT recyclers exceeding the one-year accumulation time limits in DTSC's regulations; and (3) CRT recyclers shipping their CRT glass with no control over the end disposition.<sup>9</sup>

Consequently, millions of pounds of hazardous waste CRTs and CRT glass either remained stockpiled at locations across California or were shipped out of state, potentially for unauthorized use or disposal. For example, in May 2013, Dow Management abandoned millions of pounds of CRTs in warehouses in Yuma, Arizona, and DTSC invested considerable time and resources enforcing the proper disposition of the waste shipped to the facilities by California recyclers, as indicated by claims submitted to CalRecycle's cost-reimbursement program. A total of 3,690,298 pounds of CRTs were removed and rerouted to appropriate management facilities.

*Regulatory Response to Changes:* DTSC determined the universal waste regulations no longer provided effective management options and incentives, leading to improper CRT and CRT glass management in California, other states, and potentially overseas. To prevent threat to public health and the environment, DTSC filed emergency regulations entitled "Disposition Options for Universal Waste Cathode Ray Tubes (CRTs) and CRT Glass" with the Secretary of State on October 15, 2012, with an expiration date of October 15, 2014.<sup>10</sup> These regulations included specific provisions to encourage the proper management of CRTs and CRT glass: (1) the express regulatory requirement that the ultimate disposition of the CRTs generated from allowable treatment<sup>11</sup> be recycled at a CRT glass manufacturer or at a primary or secondary lead

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<sup>8</sup> "Looking Through Glass CRT GLASS RECYCLING IN INDIA" *Study by Toxics Link Research Team* Priti Mahesh, Ankita Jena and Vinod Sharma.

<sup>9</sup> "CA CRT Glass Issue – The Facts" Internal DTSC Issue Statement 2012.

<sup>10</sup> Office of Administrative Law Notice File Number: 2012-1003-01E

<sup>11</sup> California Code of Regulations, title 22, division 4.5, chapter 23, sections 66273.72(b) & (c)

smelter<sup>12</sup>; and (2) strong, clearly stated, and enforceable regulatory requirements for documenting the proper disposition of CRTs and CRT glass treated pursuant to article 7 of chapter 23.

DTSC subsequently requested, and OAL approved and filed with the Secretary of State, two re-adoptions of the emergency regulations in 2014 and 2016.<sup>13</sup> During this period, DTSC explored and evaluated the effectiveness of disposition options for CRTs and CRT glass as provided by the emergency regulations that would remain in effect for up to six years.

CalRecycle adopted emergency regulations<sup>14</sup> in August 2015 to eliminate the required demonstration that the ultimate disposition of CRTs and CRT glass is not disposal to land, water, or air. Instead, the approved recyclers must simply be compliant with applicable law and the recycler's conditions of authorization. These emergency regulations allowed payment for claims involving the disposal of CRTs and CRT glass. CRT recyclers did not pursue either of the disposal options provided by the DTSC emergency regulations until CalRecycle adopted their emergency regulations. CRT recyclers did not dispose of CRT panel glass in a nonhazardous waste landfill (as a nonhazardous waste), nor did they dispose CRTs and CRT glass at a permitted hazardous waste disposal facility (as fully regulated hazardous waste) until they were assured that it was an allowable option for which they would be paid under the EWRA. Following the implementation of the CalRecycle emergency regulations, CRT recyclers disposed of approximately 5 million pounds of CRT panel glass at nonhazardous waste landfills and approximately 22.8 million pounds of CRTs and CRT glass at permitted hazardous waste disposal facilities, as shown in claims submitted to CalRecycle from November 1, 2015 through November 1, 2016.

### Proposed Regulations

This rulemaking proposes to authorize the continued availability of the expanded disposition options found to be effective during the period of the emergency regulations and modified management standards that have been used by universal waste handlers since 2012. The proposed regulation will allow universal waste handlers to accept CRT devices and CRTs under the authority of chapter 23 (Standards for the Management of Universal Waste)<sup>15</sup> for the purposes of disposal, in addition to the disposition options currently allowed. This will allow universal waste handlers to accept CRT devices and CRTs for the purposes of disposal without obtaining a permit to accept, treat, or store hazardous waste.

A universal waste handler who disposes of the CRTs and CRT glass becomes a hazardous waste generator and must comply with all of the hazardous waste management requirements outlined in chapters 12 through 16, 18, 20, and 22.<sup>16</sup> These include provisions such as notifying DTSC, obtaining an EPA ID number, transporting

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<sup>12</sup> California Code of Regulations, title 22, division 4.5, chapter 23

<sup>13</sup> Office of Administrative Law Notice File Numbers: 2014-0905-03 EE and 2016-0902-04 EE

<sup>14</sup> OAL Reference Number: 2015-0812-01E

<sup>15</sup> California Code of Regulations, title 22, division 4.5

<sup>16</sup> Ibid.

on a manifest using a registered hazardous waste transporter, and disposing at a permitted hazardous waste disposal facility.<sup>17</sup>

A universal waste handler who treats the CRTs by separating the CRT panel glass from the CRT funnel glass (leaded portion) has two options for management:

1. Dispose of the CRT panel glass at a "CRT Panel Glass Approved Landfill".<sup>18</sup> The universal waste handler is responsible for making the determination that the panel glass is not a federal (Resource Conservation Recovery Act – RCRA) hazardous waste, does not exhibit a characteristic of toxicity by exceeding Soluble Threshold Limit Concentration (STLC)<sup>19</sup> thresholds, exhibits a characteristic of hazardous waste for toxicity only by exceeding Total Threshold Limit Concentration (TTLC)<sup>20</sup> thresholds, does not exceed TTLC for of 30,000 mg/kg for lead (3%), and meets land disposal restriction treatment standards.
2. If testing of the CRT panel glass shows that it exceeds the TTLC for barium *only*, then it is no longer a waste. CRT panel glass that meets the criteria and is recycled may be used for specific end uses outlined in HSC 25143.2.5(d).

Universal waste handlers who separate CRT panel glass must ensure that there is no comingling of CRT funnel glass and CRT panel glass to avoid cross contamination of hazardous constituents.

CRTs and CRT glass may still be recycled via CRT glass manufacturing or primary or secondary lead smelting. Universal waste handlers that transport CRTs and CRT glass to another facility must keep records with specific information and contractual arrangements between the two facilities to ensure that the CRTs and CRT glass reach their intended destination. The proposed regulations require universal waste handlers who do not further process CRTs into CRT glass to ensure and document that the CRTs are legitimately recycled, disposed, or shipped to another authorized universal waste handler for further treatment.

The proposed regulations allow CRT recyclers to send their CRTs to an out-of-state recycler (e.g., an intermediate facility, as defined in the proposed regulations) provided they ensure all of the CRT glass generated is subsequently recycled by a CRT glass manufacturer or lead smelter. These CRT recyclers must also document and maintain onsite specific information regarding transporters, intermediate facilities, contracts with the intermediate facilities, the CRT glass manufacturer or lead smelters, the dates and quantities of shipments, and confirmation receipts from the CRT glass manufacturer or

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<sup>17</sup> The term *permitted hazardous waste disposal facility* replaces *Class I landfill* which was the term used in the 2012 emergency regulations and subsequent re-adoptions of the emergency regulations in 2014 and 2016.

<sup>18</sup> The term *CRT panel glass approved landfill* replaces *Class II* and *Class III landfill* terms which were used in the 2012 emergency regulations and subsequent re-adoptions of the emergency regulations in 2014 and 2016.

<sup>19</sup> Toxic as defined through application of laboratory test procedures called the "Waste Extraction Test" (commonly called the "WET"). The results of the WET tests are compared to their respective regulatory limits, the Soluble Threshold Limit Concentrations (STLCs), which appear in California Code of Regulations, title 22, subsection 66261.24(a)(2).

<sup>20</sup> Toxic as defined through application of laboratory test procedures called the "total digestion" test methods. The results of each of these laboratory tests are compared to their respective regulatory limits, the TTLCs, which appear in California Code of Regulations, title 22, subsection 66261.24(a)(2).



lead smelters. The contractual arrangement between the California CRT recycler and the out-of-state CRT recycler, as proposed in these regulations, is meant to maintain the necessary oversight to ensure the CRTs from the California recycler are recycled as required by the proposed regulations and make it clear that the California CRT recycler is responsible for any improper disposition of the generated CRT glass.

In addition to the requirements above, the proposed regulations require notifications and documentation pertaining to the disposal of CRTs and CRT glass in a permitted hazardous waste disposal facility and also require the disposal of CRT panel glass meeting specified conditions in a CRT panel glass approved landfill in California. Also, please note the term “CRT panel glass approved landfill” replaces “Class II” and “Class III landfill” terms in the proposed regulations and “permitted hazardous waste disposal facility” replaces the term of “Class I landfill”.

DTSC has also determined it is appropriate to allow for the disposal of CRT panel glass in nonhazardous waste landfills. Unlike CRT funnel glass, CRT panel glass does not contain leachable levels of regulated hazardous constituents, including lead. Thus, the disposal of CRT panel glass in nonhazardous waste landfills remains protective of human health and the environment because it will not result in the release of hazardous constituents into drinking or surface water sources. Since the environmental harm is minimized and the nonhazardous waste landfills remain regulated by other agencies (e.g., nonhazardous waste landfills that can accept CRT panel glass still require authorization from the Regional Water Quality Control Board to accept such waste), DTSC has determined this is an appropriate disposition option, particularly because viable recycling options for such glass have not materialized.

However, prior to disposing of CRT panel glass, it must be separated from CRT funnel glass. As stated above, CRT funnel glass does contain leachable levels of hazardous constituents and cannot be disposed of in a nonhazardous waste landfill. Thus, DTSC proposes testing requirements on the CRT panel glass destined for disposal to ensure that CRT recyclers appropriately separate CRT funnel glass from CRT panel glass so that CRT funnel glass is not inadvertently or intentionally disposed of in nonhazardous waste landfills with CRT panel glass.

As such, and based on DTSC’s proposed testing requirements, separated CRT panel glass that does not exhibit the characteristic of toxicity by exceeding soluble regulatory threshold levels is presumed not to contain CRT funnel glass because that is its inherent, unique characteristic (i.e., CRT panel glass is only hazardous for total concentrations, not soluble concentrations). Such panel glass is excluded from hazardous waste regulations and may be disposed of in a nonhazardous waste landfill. Conversely, CRT panel glass that exceeds soluble regulatory threshold levels is presumed to contain CRT funnel glass thus it would not qualify for the exclusion. Such glass cannot be disposed of in a nonhazardous waste landfill (i.e., the glass is considered hazardous waste and remains subject to California hazardous waste regulations).

DTSC decided that three provisions of the 2012 emergency regulations would not be included in the final proposed rulemaking. Recycling by means other than CRT glass manufacturing and lead smelting using the Excluded Recyclable Material (ERM)

exclusion in Health and Safety Code section 25143.2 was one main disposition option rejected for final rulemaking. The other was the discretionary DTSC concurrence process (article 9 of the emergency regulations) provided to assist CRT recyclers with ERM exclusion provision above. Lastly, the trade secrecy provision (article 10) related to submissions to DTSC pursuant to a DTSC concurrence for the ERM exclusion provision, is not included in this final rulemaking. While some recyclers have evaluated recycling options other than CRT glass manufacturing or primary or secondary lead smelting that would allow them to manage their CRTs or CRT glass as ERM, DTSC does not know of any that have implemented such options. CRT recyclers cannot meet two conditions for managing the material as ERM: (1) the recyclers cannot determine what benefit the CRT glass would provide for such uses; and (2) they do not have any data regarding the end product; the one concurrence process that was started by DTSC was rescinded by the applicant before its completion. As a result, DTSC does not seek to include the ERM provision or its associated concurrence process in the proposed finalization of emergency regulations.

The proposed regulations also add an exclusion<sup>21</sup> to acknowledge that CRT panel glass, which is managed in accordance with Health and Safety Code section 25143.2.5, is excluded from California's hazardous waste regulations. Assembly Bill (AB) 1419 (Eggman, Chapter 445, Stats. 2016) amended Chapter 6.5 of the Health and Safety Code by adding section 25143.2.5 to allow for the recycling of hazardous waste CRT panel glass, by exempting the material from DTSC's hazardous waste regulations if certain conditions are met and it exceeds the TTLC for barium *only*.

DTSC believes that the proposed regulations should include the option to properly dispose of CRTs and CRT glass because no additional viable recycling options have been found for CRT glass during the nearly six years under the DTSC emergency regulations (from 2012 to present). The disposal option provides a safe and effective alternative disposition option for CRT recyclers who could not pursue existing options that were no longer as readily available (e.g., CRT glass manufacturing) or find other new and viable recycling options. The disposal option, and corresponding management standards added by the proposed regulations, provide for a safe and effective disposition of CRTs and CRT glass and decreases the likelihood that discarded CRTs and CRT glass will be improperly managed.

#### Anticipated Benefits

This regulation allows CRT recyclers in California to collect, treat, and process CRTs and CRT glass destined for safe disposal in specified landfills under universal waste management standards (i.e., alternative management standards). Although the CRT recyclers must label, manifest, transport, and pay hazardous waste disposal fees, they are spared the expense of obtaining a hazardous waste facility permit, financial assurance for facility closure, and annual facility fees. These alternative management standards (in lieu of full hazardous waste management) for the handling and processing of CRTs and CRT glass will encourage proper and safe disposal, as the recycling market for CRT glass manufacturing disappears and a safe and viable recycling outlet has not yet developed. These regulations provide a safe and effective disposition

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<sup>21</sup> California Code of Regulations, title 22, division 4.5, chapter 11, section 66261.4

option for this large volume hazardous waste. Additionally, this regulation allows universal waste handlers to dispose of CRT panel glass (i.e., the non-lead portion of a CRT) that is properly separated from the lead portions of a CRT and meets specified criteria, including testing requirements, in specified nonhazardous waste landfills in California. This is another cost avoidance benefit to the universal waste handler who chooses to dispose of CRT panel glass as a less costly, nonhazardous waste. This will serve to deter improper management and prevent the stockpiling and abandonment of CRTs and CRT glass in California, other states, and abroad.

#### Summary of Existing Statutes and Regulations

As authorized by the EWRA, Health and Safety Code section 25214.9 authorizes DTSC to adopt alternative management standards for electronic devices, including treatment or disposal standards, as an alternative to one or more of the management standards in chapter 6.5 of division 20 of the Health and Safety Code (commencing with sec. 25100) for any specified activity that involves the management of hazardous electronic waste, including CRT devices and CRTs. The treatment standards for CRTs, adopted pursuant to section 25214.9, are found in California Code of Regulations, title 22, chapter 23, article 7, sections 66273.70 et seq.

Public Resources Code section 42476 authorizes CalRecycle to administer a cost reimbursement program for authorized collectors and recyclers of “covered electronic wastes,” which are discarded video display devices identified by DTSC in regulation as “covered electronic devices” (Cal. Code Regs., tit 22, div. 4.5, ch. 11, art. 5, appen. X, subsec. (c)). The EWRA (Pub. Resources Code, sec. 42476, subd. (f)(2).) limits the CalRecycle payment authority to reimbursement of collectors and recyclers who handle covered electronic wastes in compliance with all applicable laws and regulations.

California Code of Regulations, title 22, section 66261.9(a), identifies CRTs and CRT glass destined for recycling at a CRT glass manufacturer or primary or secondary lead smelter to be “universal wastes.” Universal wastes are subject to regulation pursuant to California Code of Regulations, title 22, chapter 23 (sec. 66273.1 et seq.). Universal waste CRTs and CRT glass regulated pursuant to chapter 23 are exempt from regulation pursuant to chapter 6.5 of division 20 of the Health and Safety Code (commencing with sec. 25100) and its implementing regulations (see Cal. Code Regs., tit. 22, sec. 66261.9(a)), except as specified otherwise in chapter 23, and therefore are not fully regulated as hazardous wastes pursuant to chapter 6.5.

California Code of Regulations, title 22, sections 66273.72 and 66273.73, authorize treatment of CRT devices and CRTs pursuant to standards specified in California Code of Regulations, title 22, sections 66273.72 and 66273.75, respectively. Prior to the implementation of emergency regulations in 2012, existing regulations (Cal. Code Regs., tit. 22, sec. 66273.75(a)(8)) require that a universal waste handler who treats CRTs pursuant to section 66273.73 authority shall “treat CRTs only for the purpose of recycling one or more types of CRT glass and ensure that all the CRT glass is reclaimed at a CRT glass manufacturer or at a primary or secondary lead smelter.” Existing regulations prohibit a universal waste handler using the treatment methodologies authorized by section 66273.73 from treating CRTs for any other purpose, including for disposal.

California Code of Regulations, title 22, sections 66273.72(b) and 66273.72(c), authorize treatment of CRT devices and CRTs without generating CRT glass, but do not expressly require that the ultimate disposition of the CRTs generated be recycled at a CRT glass manufacturer or at a primary or secondary lead smelter.

Health and Safety Code section 25143.2.5, added by AB 1419 (Eggman, Chapter 445, Stats. 2016) and effective on January 1, 2017, allows for the recycling of hazardous waste CRT panel glass by exempting the material from DTSC's hazardous waste regulations if certain conditions are met.

#### *Relation to Existing Federal Regulations*

The U.S. EPA does not regulate CRTs or CRT glass as universal wastes. Instead, under U.S. EPA's "CRT Rule" and "2014 CRT Export Rule" (40 C.F.R. §§ 260-261, 71 Fed. Reg. 42928 (Jul. 28, 2006), amended Jun. 26, 2014, 79 Fed. Reg. 36220, amended Nov. 28, 2016, 81 Fed. Reg. 85696), CRTs and CRT glass destined for recycling, and CRTs exported for reuse, are excluded from U.S. EPA hazardous waste regulation if certain conditions are met. (See 40 C.F.R. subpart E (commencing with sec. 261.39)). If the CRTs are not managed as specified by these conditions, they are not excluded. The CRTs would then be considered hazardous waste (if they exhibit a hazardous waste characteristic) for purposes of U.S. EPA regulation from the time they were "generated" (i.e., from the time the decision was made to dispose of them or to release the vacuum for recycling). Under the CRT Rule, processed CRT glass (glass removed from CRTs) that is sent to a CRT glass manufacturer or a lead smelter is not a solid waste unless it is speculatively accumulated. If it is sent for other types of recycling (other than being used in a manner constituting disposal), it may also be excluded from the definition of a solid waste, and therefore would not be regulated by U.S. EPA as a hazardous waste if it meets the criteria of 40 Code of Federal Regulations part 261.2(e)(1)(ii). (See 71 Fed. Reg. 42928 (Jul. 28, 2006)).

The CRT Rule does not prohibit a State authorized to implement its hazardous waste program in lieu of the U.S. EPA program from regulating CRTs and CRT glass as fully regulated hazardous waste or as universal waste, or imposing more stringent requirements on persons generating or managing universal waste CRTs or CRT glass than those imposed by the CRT Rule or other U.S. EPA regulations. (See 71 Fed. Reg. 42928 (Jul. 28, 2006)).

#### *Relation to Existing State Regulations*

DTSC has evaluated whether the proposed regulations are inconsistent or incompatible with existing state regulations. DTSC is the only state agency that regulates and governs hazardous waste management in general, and the alternative management standards for CRTs and CRT glass under universal waste regulations in particular. Although DTSC partners with CalRecycle and the California Department of Tax and Fee Administration (formerly the California Board of Equalization) under the EWRA, DTSC's role is well delineated from that of the two other state agencies. The proposed regulations, finalizing in part the emergency regulations which have been in effect since October 2012, are neither inconsistent nor incompatible with existing state regulations.

In fact, these regulations support the counterpart emergency regulations implemented by CalRecycle (August 2015) in response the disposal options allowed by DTSC's emergency regulations.

*Incorporated by Reference*

The regulations do not include any items incorporated by reference.

**DISCLOSURE REGARDING THE PROPOSED ACTION**

*MANDATES ON LOCAL AGENCIES OR SCHOOL DISTRICTS*

DTSC determined that the proposed regulations would not impose a local mandate or result in costs subject to reimbursement pursuant to part 7 of division 4, commencing with section 17500, of the Government Code or other nondiscretionary costs or savings to local agencies.

*COST OR SAVINGS TO STATE OR LOCAL AGENCIES, OR SCHOOL DISTRICTS SUBJECT TO REIMBURSEMENT*

DTSC determined that the proposed regulations would not result in costs or savings for any state or local agency, or school district that is required to be reimbursed pursuant to part 7 of division 4, commencing with section 17500 of the Government Code. The proposed regulations are not anticipated to result in any other nondiscretionary costs or savings imposed on local agencies, or to change any federal funding to the State.

*COST OR SAVINGS IN FEDERAL FUNDING TO THE STATE*

DTSC determined that the proposed regulations would not result in any decrease or increase in federal funds received by the State of California.

*DETERMINATION OF SIGNIFICANT, STATEWIDE ADVERSE ECONOMIC IMPACT DIRECTLY AFFECTING BUSINESS, INCLUDING THE ABILITY OF CALIFORNIA BUSINESSES TO COMPETE WITH BUSINESSES IN OTHER STATES*

As required by Government Code section 11346.5(a)(8), DTSC initially determined that the proposed regulation will not have a significant, statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states.

*COST IMPACTS ON REPRESENTATIVE PRIVATE PERSONS OR BUSINESSES*

DTSC is not aware of any cost impacts that a representative private person would necessarily incur with the proposed action. Under this proposed regulation, businesses (i.e., CRT recyclers) would not have to obtain a permit in order to, store, treat, and dispose of CRTs and CRT glass. Anyone who applies for a new permit, renewal of a permit, standardized permit or post-closure permit, or who requests certain permit modifications, is required to enter into a written agreement to reimburse DTSC for its costs incurred in processing the application or request. In addition to the cost of obtaining a permit, the recyclers would also be subject to an annual facility fee determined by the size and type of facility. CRT recyclers may still send CRTs and CRT glass to a CRT glass manufacturer and primary and secondary lead smelter without

having to obtain a permit or authorization from DTSC, but these options are limited, hence the necessity of the disposal option in this proposed regulation. Therefore, DTSC has determined that the impact of this regulation is cost avoidance

#### EFFECT ON SMALL BUSINESSES

DTSC determined that the proposed regulations may affect small businesses as they will avoid the costs associated with obtaining a permit to store, treat, and dispose of CRTs/CRT glass. The initial and annual ongoing costs for a small or a typical business (i.e., CRT recyclers) are labeled as cost avoidance.

#### EFFECT ON HOUSING COSTS

DTSC determined that the proposed regulations would not impact housing costs.

#### RESULTS OF THE ECONOMIC IMPACT ANALYSIS

As required by Government Code section 11346.3(b), DTSC completed an economic impact assessment and determined that the proposed regulation will not have a significant adverse economic impact on business. DTSC initially determined that the proposed regulations:

- May (to an unknown extent) increase the number of jobs created in California and will have no effect on the number of jobs eliminated.
- Will have no effect on either the creation or elimination of businesses in California.
- Will have no effect on the expansion of existing businesses in California.
- Will provide the benefit of a safe and effective disposition option for this large volume hazardous waste. The avoidance of the expense of a lengthy review process for obtaining a hazardous waste facility permit will deter improper management and prevent the stockpiling and abandonment of CRTs and CRT glass in California, other states, and abroad.

#### **CONSIDERATION OF ALTERNATIVES**

DTSC must determine that no reasonable alternative considered by DTSC or that has otherwise been identified and brought to the attention of DTSC would be more effective in carrying out the purpose for which the action is proposed, would be as effective and less burdensome to affected private persons than the proposed action, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law. The basis and supporting information for this determination are discussed below.

- 1. Recommended Alternative:** Expand the existing options for the disposition of CRTs and CRT glass currently regulated under DTSC's Universal Waste Regulations. By removing the requirement that a universal waste handler may treat CRTs only if the glass is sent for recycling to either a CRT glass manufacturer or a primary or secondary lead smelter, the handler can manage the CRTs and CRT glass under universal waste rules, and may decide to dispose of the CRTs or portions of the CRTs by two different options. One option is the disposal of CRTs and CRT glass at a permitted hazardous waste facility, managed as fully regulated hazardous waste from the point the decision to dispose is made. The other option is disposal of certain types of CRT glass (that do not contain lead and are properly

separated from lead-containing CRT glass) in certain class II or III landfills, if specific requirements are met, including waste criteria requirements prior to disposal.

2. **Alternative:** Amend Universal Waste regulations to allow recycling by means other than CRT glass manufacturing and lead smelting. This alternative allows the universal waste handler to determine whether the CRT glass can be recycled as ERM and includes an entire article outlining an optional ERM concurrence process offered by DTSC to determine whether the CRT glass is excluded from regulation as hazardous waste for specific alternative recycling methods. This alternative was implemented as part of the emergency regulations in 2012 and the two subsequent re-adoptions of the emergency regulations in 2014 and 2016 to promote legitimate recycling efforts by stakeholders. However, because no clear, viable alternative recycling methods emerged during the entire period in which the emergency regulations were in effect, DTSC does not seek to finalize this alternative.
3. **Alternative:** Amend Universal Waste regulations by DTSC identifying and listing only specific recycling options in addition to CRT glass manufacturing and primary and secondary lead smelting. This alternative was considered but not included in the emergency regulations mentioned above, as no known viable alternative recycling option had been identified.
4. **No Action:** Existing regulations require that CRT glass gets recycled by a CRT glass manufacturer or lead smelter, as those were determined to be the safest recycling options. However, these markets are not sustainable, and lead smelting is not a viable option for panel glass, which contains little to no lead. Without the addition of alternative disposition options, the effectiveness of CalRecycle's recycling (payment) program is certain to diminish. While disposal to hazardous waste landfills may not be as preferable as recycling, it provides a legal and safe disposition for CRTs and CRT glass that encourages the continued success of the EWRA and discourages the stockpiling or abandonment of CRT materials.

## **OTHER APPLICABLE REQUIREMENTS PRESCRIBED BY STATUTE**

### **CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) COMPLIANCE**

DTSC determined that this rulemaking project is exempt under CEQA (Pub. Resources Code, sec. 21000 et seq.). This rulemaking meets the General Rule Exemption available under section 15061(b)(3), title 14 of the California Code of Regulations. A draft Notice of Exemption (NOE) is available for review with this rulemaking file and will be filed with the State Clearinghouse when the regulations are adopted.

## **CONTACTS**

Inquiries regarding technical aspects of the proposed regulation or CEQA documents may be directed to Teresa Rizzardo of DTSC at (916) 323-3624. If unavailable, contact Jessica Twining of DTSC at (916) 445-2959. However, such oral inquiries are not part of the rulemaking record.

A 45-day public comment period for this rulemaking file, as described above, will commence on July 6, 2018, and close on August 20, 2018, at 11:59 p.m. PDT. During this time, DTSC will accept statements, arguments, or contentions and/or supporting documents regarding this rulemaking that must be submitted in writing, or may be presented orally or in writing at the public hearing on August 20, 2018, from 1 p.m. to 3 p.m. Comments must be received by the deadline in order for them to be considered before DTSC adopts, amends, or repeals these regulations.

## **AVAILABILITY OF TEXT OF PROPOSED REGULATIONS and INITIAL STATEMENT OF REASONS**

Copies of the Notice, Initial Statement of Reasons, the text of the proposed regulations, all the information upon which its proposal is based, and the express terms of the proposed regulation are posted on DTSC's Internet site at <http://www.dtsc.ca.gov/LawsRegsPolicies/Regs/index.cfm> or may be obtained from Teresa Rizzardo of DTSC, as specified below.

After the close of the comment period, DTSC may adopt the proposed regulation. If substantial changes are made, the modified full text will be made available for comment for at least 15 days prior to adoption. Only persons who request the specific proposed regulation, attend the hearing, or provide written comments on this specific regulation will be sent a copy of the modified text if substantive changes are made. Once the regulation has been adopted, DTSC prepares a Final Statement of Reasons which updates the Initial Statement of Reasons, summarizes how DTSC addressed comments, and includes other materials required by Government Code section 11346.9. Copies of the Final Statement of Reasons may be obtained from Teresa Rizzardo at the address listed below. A copy of the Final Statement of Reasons, along with the date the rulemaking is filed with the Secretary of State and the effective date of the regulation, will also be posted on DTSC's Internet site at: <http://www.dtsc.ca.gov/LawsRegsPolicies/Regs/index.cfm>

To be included in this regulation package's mailing list and to receive updates of this rulemaking, please visit <http://www.dtsc.ca.gov/ContactDTSC/ELists.cfm> and subscribe to the applicable eList, or email: [crt\\_regs@dtsc.ca.gov](mailto:crt_regs@dtsc.ca.gov).

Please direct all written comments, procedural inquiries, and requests for documents by mail or email, to:

Ms. Teresa Rizzardo  
Department of Toxic Substances Control  
P.O. Box 806  
Sacramento, CA 95812-0806

Email address: [crt\\_regs@dtsc.ca.gov](mailto:crt_regs@dtsc.ca.gov)  
Phone number: (916) 323-3624

If Teresa Rizzardo is unavailable, please call Jessica Twining at (916) 445-2959.